

Appl. No.: 09/885,336  
Amdt. dated September 29, 2003  
Reply to Office Action dated April 28, 2003

## **REMARKS**

In the specification, paragraphs [001] and [0035] have been amended to correct typographical and clerical errors in accordance with the Examiner's suggestion.

Old claims 1-11 have been canceled. New claims 12-27 have been substituted. Independent claims 12 and 19 have been drafted to include the limitations of claim 4 which the Examiner indicated included allowable subject matter if rewritten in independent form to include the limitations of the base claim. Accordingly, independent Claims 12 and 19 include the limitations of old claim 4, with the exception noted below, and correspond to canceled independent claims 1 and 10. The limitations "dry" and "without lubrication" which appeared in the old claim set have been eliminated from the new claim set because they are not deemed relevant to the patentability of the claimed inventions. Also, some typographical and clerical errors have been corrected from the old set of claims in the new set of claims.

Further, Claim 27 has been added to clarify that the claimed invention includes both die casting dies for use with molten metal as well as molds used in plastic molding of articles. Support for the claim can be found in paragraph [006] which states, "There is a need for nominal sized ejector pins having a friction reducing treatment which remains intact following the cutting and deburring of the ejector pin, so that builders of plastic injection molds and die cast dies can quickly and economically purchase a pre-treated pin "off the shelf"."

Also, included herewith is a petition for extension of time. Applicant believes the claims are now in condition for allowance and respectfully requests the timely issuance of a Notice of Allowance.

Appl. No.: 09-885,336  
Amdt. dated September 29, 2003  
Reply to Office Action dated April 28, 2003

Respectfully submitted,

Law Offices of Mark A. Hamill, P.C.

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## UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILED DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,336	06/19/2001	Glenn Starkey	26814-92189	5213

23644 7590 04 28 2003  
BARNES & THORNBURG  
2600 CHASE PLAZA  
10 SOUTH LASALLE STREET  
CHICAGO, IL 60603

SEP 29 2003

EXAMINER
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NGUYEN, THU KHANH T

ART UNIT	PAPER NUMBER
1722	

DATE MAILED: 04/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

RECEIVED  
MAY 02 2003  
BARNES & THORNBURG

SEF 7.9.2003

Application No.

09/885,336

Applicant(s)

STARKEY, GLENN

Examiner

Thu Khanh T. Nguyen

Art Unit

1722

**Office Action Summary***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-11 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3 and 7-11 is/are rejected.
- 7) Claim(s) 4-6 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.
 

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5

- 4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: on page 1, line 6, the U.S. Pat. No. 265,042 should have been U.S. Ser. No. 08/265,042. Also the statuses of those patent applications need to be updated.

Appropriate correction is required.

2. The spelling of PTFE should be consistent throughout the whole specification and the claims. The correct spelling is polytetrafluoroethylene.

### ***Claim Objections***

3. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The thickness of 0.00004 inch to 0.001 inch is out of the range of 0.00004 to 0.00007 inch and does not further limit the thickness range as claimed in claim 1.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riley et al (4,443,172) in view of the Japanese reference (06-151490).

Riley et al disclose an apparatus for molding cathode electrodes for sodium sulphur cells. comprising an upper mold portion (44) and a lower mold portion (42) forming a cavity (50); an ejector receiving bore (Figs. 2-4, bores around pins 60), a plurality of ejector pins (60) with elongated, steel shank extending into the mold cavity to eject molded article (Fig. 4, 60), wherein the pins having a coating layer of chrome-plating to eliminate sticking of the molded component to the pin (col. 5, lines 33-35). However, Riley fails to disclose the coating layer consisting of nickel alloy and having a thickness of less than 0.00001 inch up to 0.00007 inch.

The Japanese reference ('490) discloses a mold for manufacturing semiconductor device, comprising a plurality of ejector pins (10-1 to 10-4) being coated with a film layer containing cluster diamond, chrome and nickel to improve water resistant and durability (see Title and abstract); wherein the thickness of the coating ranged from 0.000004 inch (0.1  $\mu$ m) to 0.0012 inch (50  $\mu$ m).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify Riley by replacing the chrome-plating coating layer with a coating layer consisting of nickel alloy with the thickness of 0.000004 inch to 0.0012 inch as taught by the Japanese reference, because the nickel alloy coating would improve water resistant and durability of the ejector pins; wherein the thickness of 0.00004 inch to 0.0012 inch has proved to work best for ejector pins in the semiconductor molding apparatus.

6. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riley et al ('172) in view of the Japanese reference ('490) as applied to claims 1-3 and 10-11 above, and further in view of Reed (4,235,583).

Riley et al and the Japanese reference disclose a molding apparatus with a plurality of ejector pin having nickel alloy coating, but fail to disclose the metal coating is an alloy including cobalt and nickel.

Reed discloses an extrusion die having a plurality of grid pin (13) having a coating (15) consisting of nickel, chromium, cobalt and cobalt-nickel to produce a uniform and smooth surface (col. 2, lines 61-65).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify Riley by providing a coating layer consisting of nickel or cobalt-nickel as taught by Reed, because cobalt-nickel is another alternative which also provide a uniform and smooth surface for the ejector pins.

In regard to claim 8, it would have been obvious to a skilled artisan to select the right ration for the nickel-cobalt compound depending on the desired hardness, smoothness of the coating layer. It is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

#### ***Allowable Subject Matter***

7. Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest an ejector pin or any mold parts having a coating consisting of nickel, phosphorus, and polytetrafluoroethylene.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In regard to the thickness of the coating layer, according to the letter from attorney Jeffery A. Sadowski dated March 1, 2001, Amolloy has coated ejector pins having thickness of 0.000060 to 0.00007 inch as standard practice since at least 1982.

The German reference (197 20 927 A1) discloses a lubricating coating for ejector pins consisting of a matrix (18), chemically deposited nickel (see title and abstract) to improve wear resistant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Khanh T. Nguyen whose telephone number is 703-305-7167. The examiner can normally be reached on Monday- Friday, 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

TN  
April 21, 2003

*[Signature]*  
ROBERT DAVIS  
PRIMARY EXAMINER  
GROUP 1300

*[Signature]*

MAY 02 2002

Sheet 1 of 1

U. S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

INFORMATION ON PUBLIC USE STATEMENT

SEF 29 2003

ATTY DOCKET NO 26814/92189

SERIAL NO 09,885,336

APPLICANT Glenn Starkey

FILING DATE June 19, 2001

GROUP 122

RECEIVED

MAY 08 2002

TC 1700

## U. S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
TN	AA	2,837,796	Jun. 10, 1958	Alberti	22	94	Apr. 12, 1955
TN	AB	4,052,033	Oct. 4, 1977	Taylor	249	67	Sept. 29, 1973
TN	AC	4,068,989	Jan 17, 1978	Cantarutti	425	38	Sept. 3, 1976
TN	AD	4,443,172	Apr. 17, 1984	Riley, et al.	425	112	Nov. 25, 1981
TN	AE	4,889,311	Dec. 26, 1989	Anglin	249	68	Aug. 10, 1988
TN	AF	5,288,061	Feb. 22, 1994	Pieroni	269	4.5	Feb. 28, 1992
TN	AG	5,096,352	Mar. 17, 1992	Lemelson	411	424	Mar. 7, 1990
TN	AH	5,644,833	Jul. 8, 1997	Starkey	29	527.2	Jun. 5, 1995
TN	AI	5,386,659	Feb. 7, 1995	Vaid, et al.	42	69.02	Dec. 17, 1993
	AJ						
	AK						
	AL						
	AM						
	AN						
	AO						
	AP						
	AQ						
	AR						
	AS						
	AT						

## OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

TN	AJ	Letter from attorney Jeffrey A. Sadowski dated Feb. 6, 2001
TN	AV	Letter from attorney Jeffrey A. Sadowski dated March 1, 2001
TN	AW	Advertisement of Bales Mold Service - No date
	AK	
	AY	
	AZ	

Examiner

Thuy Linh Nguyen

Date Considered

4/18/05

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.  
Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

SEP 28 2003

**Notice of References Cited**

Application/Control No.

09/885,336

Applicant(s)/Patent Under

Reexamination

STARKEY, GLENN

Examiner

Thu Khanh T. Nguyen

Art Unit

1722

Page 1 of 1

**U.S. PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
A	US-4,235,583	11-1980	Reed, James R.	425/464
B	US-			
C	US-			
D	US-			
E	US-			
F	US-			
G	US-			
H	US-			
I	US-			
J	US-			
K	US-			
L	US-			
M	US-			

**FOREIGN PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
N	DE-197 20 927 A	11-1997	German		
O	JP 06-151 490 A	05-1994	Japan		
P					
Q					
R					
S					
T					

**NON-PATENT DOCUMENTS**

Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)

*	U	
	V	
	W	
	X	

A copy of this reference is not being furnished with this Office action. See 37 CFR § 1.107(c).  
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.